

GU78XXA

3-TERMINAL POSITIVE VOLTAGE REGULATORS

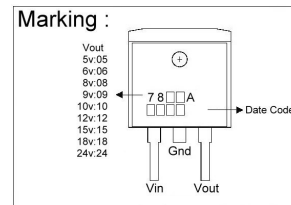
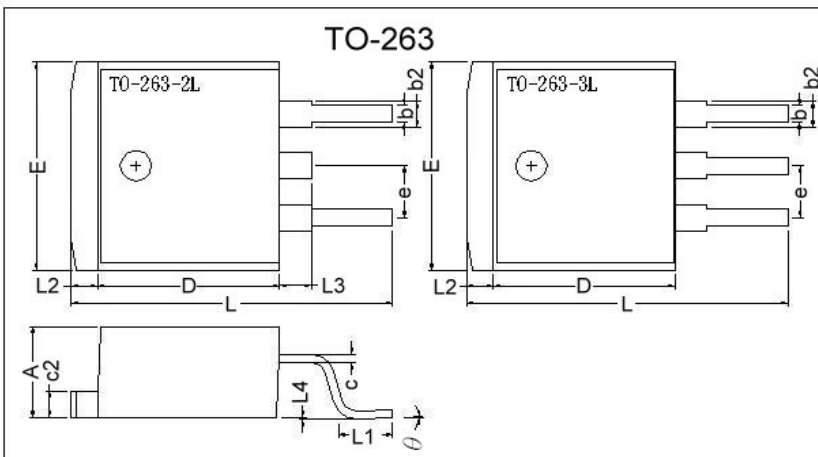
Description

The GU78XXA series of fixed-voltage monolithic integrated-circuit voltage regulators designed for a wide range of applications. These applications include on-card regulation for elimination of noise and distribution problems associated with single-point regulation. Each of these regulators can deliver up to 1.5 amperes of output current. The internal current limiting and thermal shutdown features of these regulators make them essentially immune to overload.

Features

- 5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 24V output voltage available
- Internal Thermal Overload Protection
- High Power Dissipation Capability
- Internal Short-Circuit Current Limiting
- No External Components
- Output Transistor Safe-Area Compensation

Package Dimensions



| REF. | Millimeter | | REF. | Millimeter | |
|------|------------|------|-------|------------|------|
| | Min. | Max. | | Min. | Max. |
| A | 4.40 | 4.80 | c2 | 1.25 | 1.45 |
| b | 0.76 | 1.00 | b2 | 1.17 | 1.47 |
| L4 | 0.00 | 0.30 | D | 8.6 | 9.0 |
| c | 0.36 | 0.5 | e | 2.54 REF. | |
| L3 | 1.50 REF. | | L | 14.6 | 15.8 |
| L1 | 2.29 | 2.79 | theta | 0° | 8° |
| E | 9.80 | 10.4 | L2 | 1.27 REF. | |

Absolute Maximum Ratings

| Parameter | | Ratings | Unit |
|--|---------------|-----------|------|
| Input voltage | GU7805A ~ 18A | 35V | V |
| | GU7824A | 40V | V |
| Output current | | 1.5 | A |
| Operating junction temperature range | | 0 ~ 150 | °C |
| Storage temperature range | | -55 ~ 150 | °C |
| Thermal resistance junction-air (RθJA) | | 65 | °C/W |
| Thermal resistance junction-cases (RθJC) | | 5 | °C/W |

Electrical Characteristics

GU7805A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=10\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|------|------|------|----------------------------|--|
| VO | A-Rank (3%) | 4.85 | 5.0 | 5.15 | V | $V_{in}=10\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $7.5\text{V} \leq V_{in} \leq 20\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 4.75 | - | 5.25 | | |
| ΔVO (Line Regulation) | | - | 3 | 100 | mV | $7\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 1 | 50 | | $8\text{V} \leq V_{in} \leq 12\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 15 | 100 | mV | $V_{in}=10\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 5 | 50 | | $V_{in}=10\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.2 | 8.0 | mA | $V_{in}=10\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=10\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.3 | | $7\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 40 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 62 | - | - | dB | $8\text{V} \leq V_{in} \leq 18\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 750 | - | mA | $V_{in}=10\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta V_o / \Delta T_j$ | | - | -1.1 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7806A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=11\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|------|------|------|----------------------------|--|
| VO | A-Rank (3%) | 5.82 | 6.0 | 6.18 | V | $V_{in}=11\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $8\text{V} \leq V_{in} \leq 21\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 5.70 | - | 6.30 | | |
| ΔVO (Line Regulation) | | - | 5 | 120 | mV | $8\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 1.5 | 60 | | $9\text{V} \leq V_{in} \leq 13\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 14 | 120 | mV | $V_{in}=11\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 60 | | $V_{in}=11\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=11\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=11\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.3 | | $8\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 45 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 59 | - | - | dB | $9\text{V} \leq V_{in} \leq 19\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 550 | - | mA | $V_{in}=11\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta V_o / \Delta T_j$ | | - | -0.8 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7808A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=14\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|------|------|------|----------------------------|---|
| VO | A-Rank (3%) | 7.76 | 8.0 | 8.24 | V | $V_{in}=14\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $10.5\text{V} \leq V_{in} \leq 23\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 7.60 | - | 8.40 | | |
| ΔVO (Line Regulation) | | - | 6 | 160 | mV | $10.5\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 2 | 80 | | $11\text{V} \leq V_{in} \leq 17\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 160 | mV | $V_{in}=14\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 80 | | $V_{in}=14\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=14\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=14\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $10.5\text{V} \leq V_{in} \leq 25\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 52 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 55 | - | - | dB | $11.5\text{V} \leq V_{in} \leq 21.5\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 450 | - | mA | $V_{in}=14\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta V_o / \Delta T_j$ | | - | -0.8 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7809A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=16\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|------|------|------|----------------------------|---|
| VO | A-Rank (3%) | 8.73 | 9.0 | 9.27 | V | $V_{in}=16\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $11.5\text{V} \leq V_{in} \leq 24\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 8.55 | - | 9.45 | | |
| ΔVO (Line Regulation) | | - | 7 | 180 | mV | $11.5\text{V} \leq V_{in} \leq 27\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 2 | 90 | | $13\text{V} \leq V_{in} \leq 19\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 180 | mV | $V_{in}=16\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 90 | | $V_{in}=16\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=16\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=16\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $11.5\text{V} \leq V_{in} \leq 27\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 60 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 55 | - | - | dB | $12\text{V} \leq V_{in} \leq 22\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 400 | - | mA | $V_{in}=16\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta V_o / \Delta T_j$ | | - | -1.0 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7810A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=17\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|------|------|-------|----------------------------|---|
| VO | A-Rank (3%) | 9.70 | 10.0 | 10.30 | V | $V_{in}=17\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $12.5\text{V} \leq V_{in} \leq 25\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 9.50 | - | 10.50 | | |
| ΔVO (Line Regulation) | | - | 7 | 200 | mV | $12.5\text{V} \leq V_{in} \leq 28\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 2 | 100 | | $14\text{V} \leq V_{in} \leq 20\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 200 | mV | $V_{in}=17\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 100 | | $V_{in}=17\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=17\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=17\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $12.5\text{V} \leq V_{in} \leq 28\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 70 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 55 | - | - | dB | $13\text{V} \leq V_{in} \leq 23\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 400 | - | mA | $V_{in}=17\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta Vo / \Delta Tj$ | | - | -1.0 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7812A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=19\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|-------|------|-------|----------------------------|---|
| VO | A-Rank (3%) | 11.64 | 12.0 | 12.36 | V | $V_{in}=19\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $14.5\text{V} \leq V_{in} \leq 27\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 11.40 | - | 12.60 | | |
| ΔVO (Line Regulation) | | - | 10 | 240 | mV | $14.5\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 3 | 120 | | $16\text{V} \leq V_{in} \leq 22\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 240 | mV | $V_{in}=19\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 120 | | $V_{in}=19\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=19\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=19\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $14.5\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 75 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 55 | - | - | dB | $15\text{V} \leq V_{in} \leq 25\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 350 | - | mA | $V_{in}=19\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.2 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta Vo / \Delta Tj$ | | - | -1.0 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7815A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=23\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|-------|------|-------|----------------------------|---|
| VO | A-Rank (3%) | 14.55 | 15.0 | 15.45 | V | $V_{in}=23\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $17.5\text{V} \leq V_{in} \leq 30\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 14.25 | - | 15.75 | | |
| ΔVO (Line Regulation) | | - | 12 | 300 | mV | $17.5\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 3 | 150 | | $20\text{V} \leq V_{in} \leq 26\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 300 | mV | $V_{in}=23\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 150 | | $V_{in}=23\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.3 | 8.0 | mA | $V_{in}=23\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=23\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $17.5\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 90 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 54 | - | - | dB | $18.5\text{V} \leq V_{in} \leq 28.5\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 230 | - | mA | $V_{in}=19\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.1 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta VO / \Delta T_j$ | | - | -1.0 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

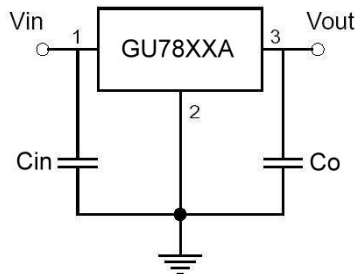
GU7818A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=27\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|-------|------|-------|----------------------------|---|
| VO | A-Rank (3%) | 17.46 | 18.0 | 18.54 | V | $V_{in}=27\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $21\text{V} \leq V_{in} \leq 33\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 17.10 | - | 18.9 | | |
| ΔVO (Line Regulation) | | - | 15 | 360 | mV | $21\text{V} \leq V_{in} \leq 33\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 5 | 180 | | $24\text{V} \leq V_{in} \leq 30\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 360 | mV | $V_{in}=27\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 180 | | $V_{in}=27\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.5 | 8.0 | mA | $V_{in}=27\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=27\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $21\text{V} \leq V_{in} \leq 33\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 110 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 53 | - | - | dB | $22\text{V} \leq V_{in} \leq 32\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 200 | - | mA | $V_{in}=27\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.1 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta VO / \Delta T_j$ | | - | -1.0 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

GU7824A (Refer to the test circuits, $T_j=0\sim 125^\circ\text{C}$, $I_o=500\text{mA}$, $V_{in}=33\text{V}$, $C_{in}=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$ unless otherwise specified)

| Symbol | | Min. | Typ. | Max. | Unit | Test Conditions |
|----------------------------------|-------------|-------|------|-------|----------------------------|---|
| VO | A-Rank (3%) | 23.28 | 24.0 | 24.72 | V | $V_{in}=33\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ $27\text{V} \leq V_{in} \leq 38\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$, $PD \leq 15\text{W}$ |
| | B-Rank (5%) | 22.80 | - | 25.20 | | |
| ΔVO (Line Regulation) | | - | 18 | 480 | mV | $27\text{V} \leq V_{in} \leq 38\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| | | - | 6 | 240 | | $30\text{V} \leq V_{in} \leq 36\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔVO (Load Regulation) | | - | 12 | 480 | mV | $V_{in}=33\text{V}$, $5\text{mA} \leq I_o \leq 1.5\text{A}$, $T_j=25^\circ\text{C}$ |
| | | - | 4 | 240 | | $V_{in}=33\text{V}$, $250\text{mA} \leq I_o \leq 750\text{mA}$, $T_j=25^\circ\text{C}$ |
| IQ | | - | 4.6 | 8.0 | mA | $V_{in}=33\text{V}$, $I_o=500\text{mA}$, $T_j=25^\circ\text{C}$ |
| ΔIQ | | - | - | 0.5 | mA | $V_{in}=33\text{V}$, $5\text{mA} \leq I_o \leq 1\text{A}$ |
| | | - | - | 1.0 | | $27\text{V} \leq V_{in} \leq 38\text{V}$, $I_o=500\text{mA}$ |
| Vn | | - | 170 | - | μV | $10\text{Hz} \leq f \leq 100\text{KHz}$, $T_j=25^\circ\text{C}$ |
| RR | | 50 | - | - | dB | $28\text{V} \leq V_{in} \leq 38\text{V}$, $f=120\text{Hz}$, $T_j=25^\circ\text{C}$ |
| VD | | - | 2.0 | - | V | $I_o=1\text{A}$, $T_j=25^\circ\text{C}$ |
| Isc | | - | 150 | - | mA | $V_{in}=33\text{V}$, $T_j=25^\circ\text{C}$ |
| Ipk | | - | 2.1 | - | A | $T_j=25^\circ\text{C}$ |
| $\Delta V_o / \Delta T_j$ | | - | -1.5 | - | $\text{mV}/^\circ\text{C}$ | $I_o=5\text{mA}$, $0^\circ\text{C} \leq T_j \leq 125^\circ\text{C}$ |

Typical Application


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